

**Shifting from outreach to engagement: Transforming Moi University's response to current development trends in agricultural research and training in Eastern, Central and Southern Africa**

Okalebo, J.R., Othieno, C.O., Ochuodho, J.O., Kipkoech, A.K., Otinga, A.N., Mongare, P. O., Olal, D.A., Navalayo, C.U., Soi, C.C. & Sunda, W.  
Chepkoilel University College, A Constituent College of Moi University, P. O. Box 1125,  
Eldoret, Kenya

**Corresponding author:** [jookalebo@gmail.com](mailto:jookalebo@gmail.com)

**Abstract**

The RUFORUM funded Outreach Project of Moi University aims at enhancing interaction between university faculty, students, farmers and other stakeholders concerned with agricultural production and developing teaching programs for effective learning. A series of meetings have been held to discuss and analyze current training at the faculty of agriculture and propose changes to ensure farmers adopt technologies developed at the universities. Through experiential learning methodologies, it is envisaged that universities will produce graduates with skills to communicate effectively with farmers. Experiential learning may require additional set of resources in the faculties in terms of additional capital investment or additional student and faculty time. Because of the changing marketing trends and the new crop of students that are more social and interactive, it is time that teaching is carried out in an experiential learning platform to maintain interest and motivation of the students and meet the changing market trends.

**Key words:** Experiential learning, linkages, outreach, Universities

**Résumé**

Le projet de sensibilisation de l'Université Moi, financé par RUFORUM, vise à favoriser l'interaction entre les professeurs d'université, les étudiants, les agriculteurs et les autres acteurs concernés par la production agricole et le développement des programmes d'enseignement pour un apprentissage efficace. Une série de réunions ont eu lieu pour discuter et analyser la formation en cours à la faculté d'agriculture et proposent des changements afin d'assurer les agriculteurs à adopter des technologies développées dans les universités. Grâce à des méthodologies d'apprentissage expérientiel, il est envisagé que les universités produiront des diplômés avec les compétences nécessaires pour communiquer efficacement avec les agriculteurs. L'apprentissage expérientiel peut exiger un

ensemble supplémentaire de ressources dans les facultés en termes d'investissement supplémentaire des capitaux ou de temps supplémentaire de l'étudiant et du professeur. En raison des tendances variables du marché et du nouveau groupe d'étudiants qui sont plus sociaux et interactifs, il est temps que l'enseignement se réalise dans une plate-forme d'apprentissage expérientiel pour maintenir l'intérêt et la motivation des étudiants et réponde aux tendances variables du marché.

Mots clés: Apprentissage expérientiel, liens, sensibilisation, Universités

## **Background**

Most African countries, particularly those south of the Sahara (SSA), have not achieved food security and improved incomes (Sanchez and Leakey, 1997) compared to countries such as Brazil and China, for example which have achieved a Green Revolution. Thus, crop yields in SSA are low and declining, often below 1 ton of staple maize/hectare/season that is a huge mismatch compared to 4-5 t/ha researchers achieve during on-farm trials. Still, new better production techniques are developed continuously in research institutions with little or no impact at the farm level. Several reasons have been used to explain the low adoption rates among small-scale farmers in the region and particularly the lack of a green revolution in the region identical to that witnessed in Asia. One advanced reason is lack of adequate resources for farmers to purchase improved technologies and weaknesses in outreach and extension services. There is also a general feeling that tertiary institutions tend to focus on theoretical teaching other than hands-on-training in agriculture, thereby producing less capable graduates that can be depended upon to transform agricultural sector.

Moi University's Chepkoilel University College obtained a research grant from the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) to implement the Project "Shifting from outreach to engagement transforming universities response to current development trends in agricultural research and training in eastern, central and southern Africa". The Project is funded with the support from the European Commission's African, Caribbean and Pacific Group of States Science and Technology Programme. The project aims at initiating a new learning platform for training agriculturalists in institutions of higher learning. The Project envisages developing responsive university research, education and outreach programmes that delivers competent graduates to

support farmers and small and medium enterprises (SMEs) and establish sustainable agro-food value chains. The specific objective of this study is to facilitate the creation of responsive university programmes (research, extension and outreach) that deliver competent graduates to support farmers and small and medium enterprises establish sustainable agro-food value chains. Thus the proposed action aims to transform the way universities engage in research, training and outreach services. The action places university staff and students within a given world situation as part of experiential learning process.

The Project is implemented under the auspices of the African Union's Comprehensive African Agricultural Development Programme (CAADP) that was established in 2003 as means of pursuing gains in agriculture as a driver for economic development at national level. In order to contribute to the 6% minimum economic growth rate proposed by CAADP, four priority areas, including research, technology development and agricultural advisory services were identified. Thus responding to, and strengthening farmers' role in Research for Development becomes critical. There is need therefore to strengthen linkages between advisors, researchers and farmers to avoid mismatch between what the farmers want and what they actually obtain.

## **Literature Summary**

Education and research has been identified as the main driver of agricultural development. However, the rate of flow of technologies from research institutions to farmers has been lower compared to the pace at which new technologies are developed. There are currently numerous efforts to revitalize agriculture in African region (RUFORUM, AGRA, CAADP, ANAFE, Team Africa, NARS, etc). In addition, there are changes in consumer demands and socio-economic environment, new emerging challenges, such as climate change, and competition between bio-fuels and food demands. The new development in the agricultural sector reflects an increasing need to approach agriculture from the full spectrum of the value chain consisting of acquisition of the right inputs to improve production, whereby some of the produce is consumed at household level, whereas the remainder is sold for household income (J. Lynam, pers. comm). The success of this value chain requires innovation systems approaches. Unfortunately, although universities are recognised as important players in revitalizing agricultural productivity and creating innovations, they are currently ill-equipped and cannot respond effectively to the demand for the much needed knowledge based graduates, who

can address real world problems. The university research and training curricula are still subject based and are not able to respond to multi-faceted challenges of poverty and other development needs (Hawkins, 2011).

Moon (2004) describes two views of learning (i) the “brick wall”, where the teacher provides bricks that build the wall of knowledge, and (ii) the “flexible network”, where new ideas are assimilated into a steadily increasing network of knowledge and understanding. In the “network” model (and unlike the “wall” model) new ideas do not just accumulate, but also influence or change what is already known through the process of “accommodation”. University education is typically front-loaded where effort is put into conveying ideas, which are often competing perspectives, and there is little time to help individual students to reflect on experiences (Eraut, 1994). Considering that most of the university training is done on adults (or students on transitions to adulthood), it seems there is need to change the approach towards more experimental and problem solving learning and change learning techniques from those linked to pedagogy to those appropriate for androlog, the art and science of helping adults learn (Smith, 2002). Kolb (1984) developed an experiential learning model (Fig. 1). It is envisaged that adopting experiential learning as a learning tool will enable graduates of agriculture to obtain skills to gainfully interact with farmers and demonstrate more effectively technologies to farmers and achieve agricultural development.

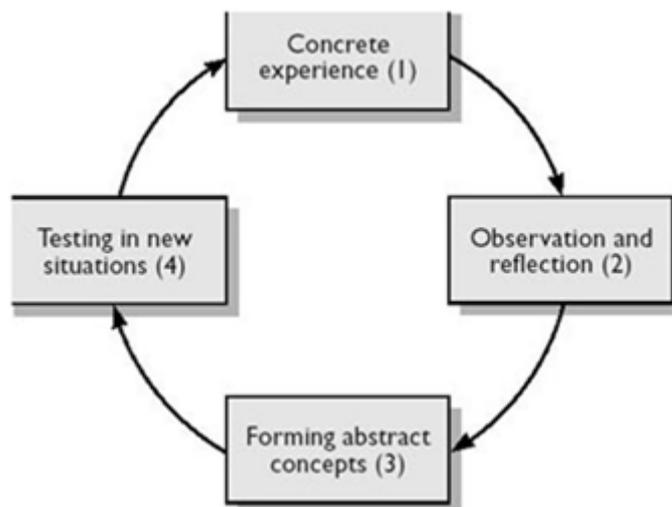


Figure 1. Kolb's Cyclical model of experiential learning.

## **Study Description**

This project's inception workshop was held in March, 2010 at Chepkoilel University College, Eldoret, whereby 40 stakeholder categories participated and deliberated on problems and successes related to agricultural training and production in western Kenya. As a follow-up, RUFORUM identified a consultant, Dr. Richard Hawkins of ICRA based in The Netherlands, to conduct a gap analysis on the status of the universities (Bunda in Malawi, Makerere in Uganda and Moi in Kenya), particularly on infrastructure, teaching curricula including practical field attachments and visits, the relationships between the University and the farmers. The Project trained the faculty members on issues related to effective curriculum and learning. There were also a series of meetings organized by RUFORUM or Moi University Project team that involved different stakeholders on ways to improve effectiveness of Agricultural training.

## **Research Application**

Never before has the effectiveness of agricultural training been critically scrutinized to assess its appropriateness for causing agricultural development. During the inception meeting, the key resolution was that training of agricultural graduates for the development of agriculture cannot be a preserve of the Universities. All stakeholders have different roles to play. Table 1 below identifies the role each of the stakeholders needs to change in order to facilitate training of graduates that will help spur agricultural development.

When institutions play the roles as indicated in Table 1, it is envisaged that the outcome will be adoption of an experiential learning approach where all stakeholders contribute in training. It will also allow agricultural training to be guided by the nature of demand for agricultural graduates and create expansive networks involving university students, lecturers and researchers, the extension staff, service providers, the agro-industry or processors and farming communities.

Examples of several universities that are advanced in the area of experiential learning were cited during the first training held at Moi University in June, 2012. Such universities are Wageningen University and Research Centre (Netherlands), and the EARTH university in Costa Rica. The immediate beneficiaries from the project are the students and faculty and other actors directly engaged in the experiential learning process. Others are the small to medium scale farming households, agro-industry stakeholders who benefit better

**Table 1. The role different stakeholders have to play in order to facilitate effective agricultural training.**

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Stakeholder roles

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**Government**

Develop effective Agricultural Institutional ethics and policy  
Fund universities in a more direct way (increase from the current 0.3% of GDP)  
Assure agricultural infrastructure (following closely the Indian model– Facilitate private sector)  
Develop strategies towards county based agricultural development (example of Brazil)  
Land size regulation  
Cooperatives regulation  
Government should vet and guide private sector players  
Government to supervise more on the private sector products and marketing strategies as a check on product quality

**Universities**

Paradigm shift in teaching to address needs of farmers  
Rebranding agricultural training to attract more students  
Stop treating education as business but an agent of change  
Increase practical/attachment time  
Develop Internships programs for postgraduates  
Should reengineer their curriculum – load and content (quality vs quantity)  
Develop conscious partnerships with private sector for student attachments  
Reformulate information sharing pathways and outreach programs  
Make outreach programs and dissemination of technologies more accessible  
Increase budget to outreach programs – for dissemination of information

**Private sector**

Partner with government and other institutions for farmer protection  
Be honest and patient as they introduce new products  
Incorporate social responsibility in their programs  
Develop a long term relationship with farmers

**Farmer/Farmer institutions (FAs)**

Change attitude towards technologies and accepting new ideas  
Change attitudes towards agriculture and rural living  
Build capacity for farmers to be accountable, profitable, trusted, strong,

**NGOs**

Allocate more time to research and training (learning) in order to increase benefits to farmers  
Employ and build capacity of personnel trained and knowledgeable in agriculture  
Intensify advocacy for technology adoption  
NGOs to work with farmer associations rather than individuals to avoid competition

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service delivery. Overall, the project action aims to transform the way universities engage in training, research and outreach activities. The action places university staff and students within a given world situation as part of experiential learning process. Table 2 shows the attractiveness of the curriculum change to the members of University's faculty of Agriculture.

**Table 2. Potential changes in the curriculum to incorporate experiential learning.**

Proposed change	Proportion of respondents proposing change in the curriculum (%)
Addition of management courses	20.4
Addition of social courses	13.2
Addition of practical hours	22.1
Change teaching modes	7.3
Increase number of lecture hours	23.8
To remain unchanged	2.6
Development of agricultural business parks/incubators	10.6

N=46.

The proposed changes in the curriculum to make it more of experiential learning seem to suggest preference on increase in lecture and practical hours and less on incubators. Effective curriculum should be output based that is student-centered and results oriented where what students are to learn and purpose for learning is clearly identified.

#### **Challenges of adopting experiential learning.**

The *adoption of experiential learning is challenging* because of the amount of effort required. In order to implement experiential learning dialectical modes of experiencing thinking and acting will be required (Kolbs, 1984) that can easily add hours to the numbers of hours students are faculty members will need to put into a course. Faculty members will also need to be fully trained (an effort now we are implementing in the 'RUFORUM funded Outreach Project') since experiential learning is a drastic departure from the traditional lecture based learning that is more linked to pedagogy (Daly, 2001). The general prerequisites for implementing experiential learning will evidently require additional resources. This support results reported in Table 2 that depicted skepticism of the faculty on changes that may require huge investments. It is evident that faculties agree on the need to make changes on teaching and curriculum. It is recommended that faculties need to intensify fund raising measure to raise funds from different sources to fund large investment that is required for effective agricultural learning. However, with the current market trends that require students with high adaptive capacities, and given that students are now growing up in highly social environments that is progressively interactive and communication intensive, they require also an equally interactive and stimulating learning

environment that will ensure concentration, interest and motivation (Ueltschy, 2001). The conclusion is that, it is time to embrace experiential learning and the 'Outreach Project' is facilitating transition to experiential learning platforms at the faculty.

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